two eye-spots ? Do the various cells of the other tissues yield up their A molecules and dispatch them to those spots ? No, for we are told, contrary to the assumptions of Weismann and his followers, which were orthodox doctrines a generation ago, that every cell of the body continues to have in its nucleus all the chromosomes and all the genes (i. e., genes of all the kinds) which were present in the egg-cell from which it has grown, every cell-division repeating the exact halving of each gene. It must be, then, either that certain cells are destined to form or constitute the pigmented tissue of the eye from some early stage of the embryo's development, and that they somehow find their way to the right places and there proceed to develop their pigment, perhaps by repeated division of the A gene ; or that undifferentiated cells situated at the place where the two eyes are developing are somehow influenced from or by other parts of the organism in such a way that they proceed to develop the pigment. Either alternative remains entirely indescribable in terms of physics and chemistry. Yet this is but one of the simplest possible instances of the correlation between the gene and the adult feature.

This problem of describing the chain of events which connects the gene with its correlated adult feature must obviously be still more complex and difficult of solution when we consider more complex adult features. Take the case of seven blue spots to be seen as a specific feature of the coloration of the under-wing of moths of

a given species. Or again, the colour spots or ocelli on the tail of the peacock. In the last case we have to do, not merely with the production of a single pigment at the appropriate spot, but with the production for each colour-spot of a variety of pigments, and their distribu-